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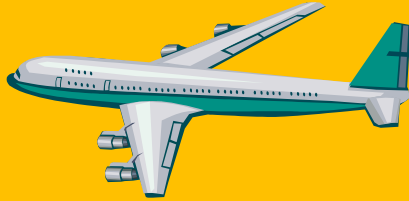
# **Futures, Information and Climate Risk**

Mark Roulston

# Forwards and Futures

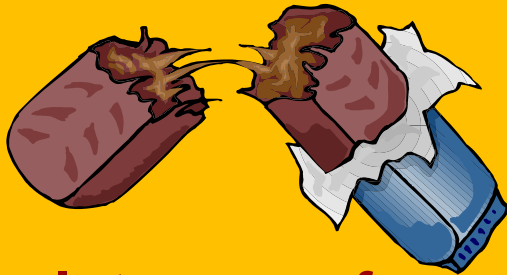
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- **Forward** contract for delivering a commodity at a specified future date and at a specified price.
- **Futures** contract = a forward contract traded through an exchange with standardised volume, quality, delivery location etc.



**Airlines hedge against rises in fuel prices.**

**Farmers hedge against falls in the price of crops.**



**Chocolate manufacturers hedge against rises in cocoa prices.**

**Mexico hedged oil exports for 2009 (330 million bbl) at \$70/bbl.**



# Hedgers and Speculators

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**Hedgers** are producers or consumers who are naturally exposed to risk and want to mitigate that risk.

**Speculators** expose themselves to risk in the hope of making a profit. They can play a role analogous to insurance companies.

The **hedger/speculator** distinction is not clear-cut.

# Winton Capital Management

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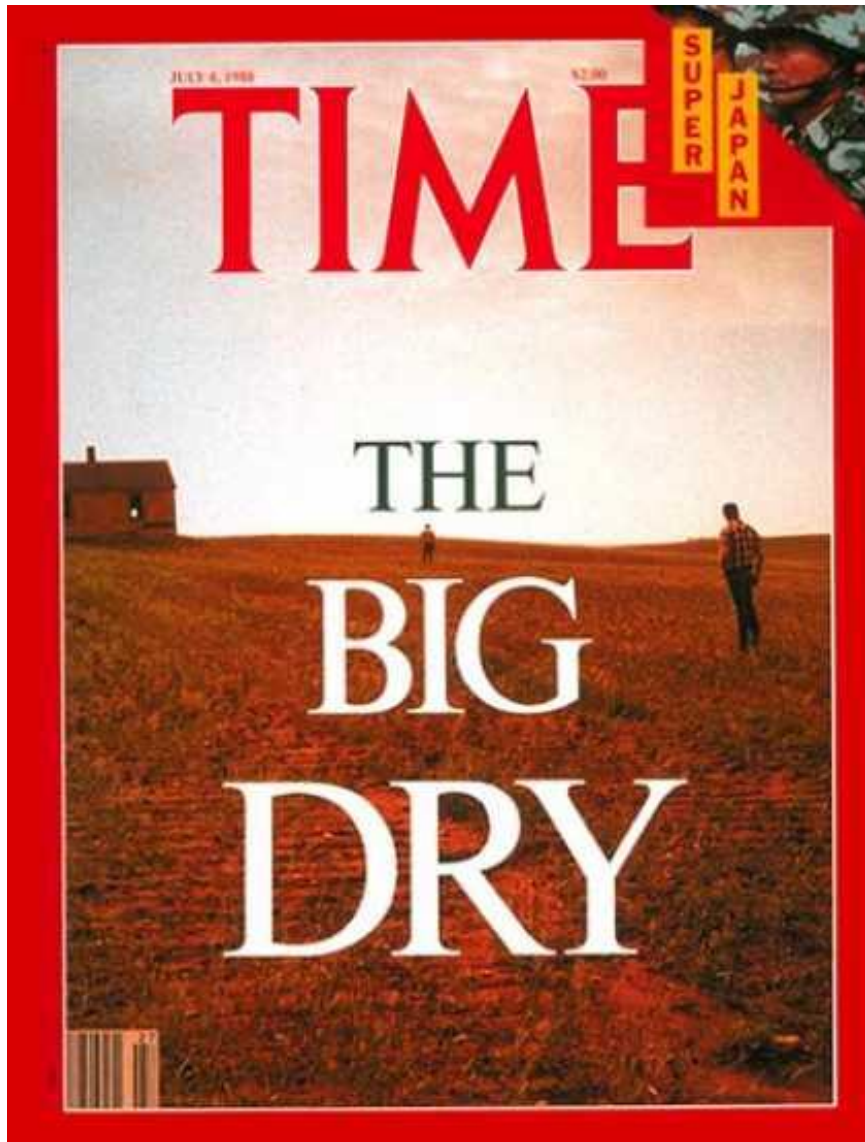
Speculates in 100+ futures markets around the globe.

Employs around 100 statisticians, physicists, computer scientists, many with PhDs.

Gathers large amounts of historic data from the markets looking for patterns or trends.

Trades using computer algorithms – no human intervention.





## Cornbelt Drought in Summer of 1988

Corn



80%

Soybean



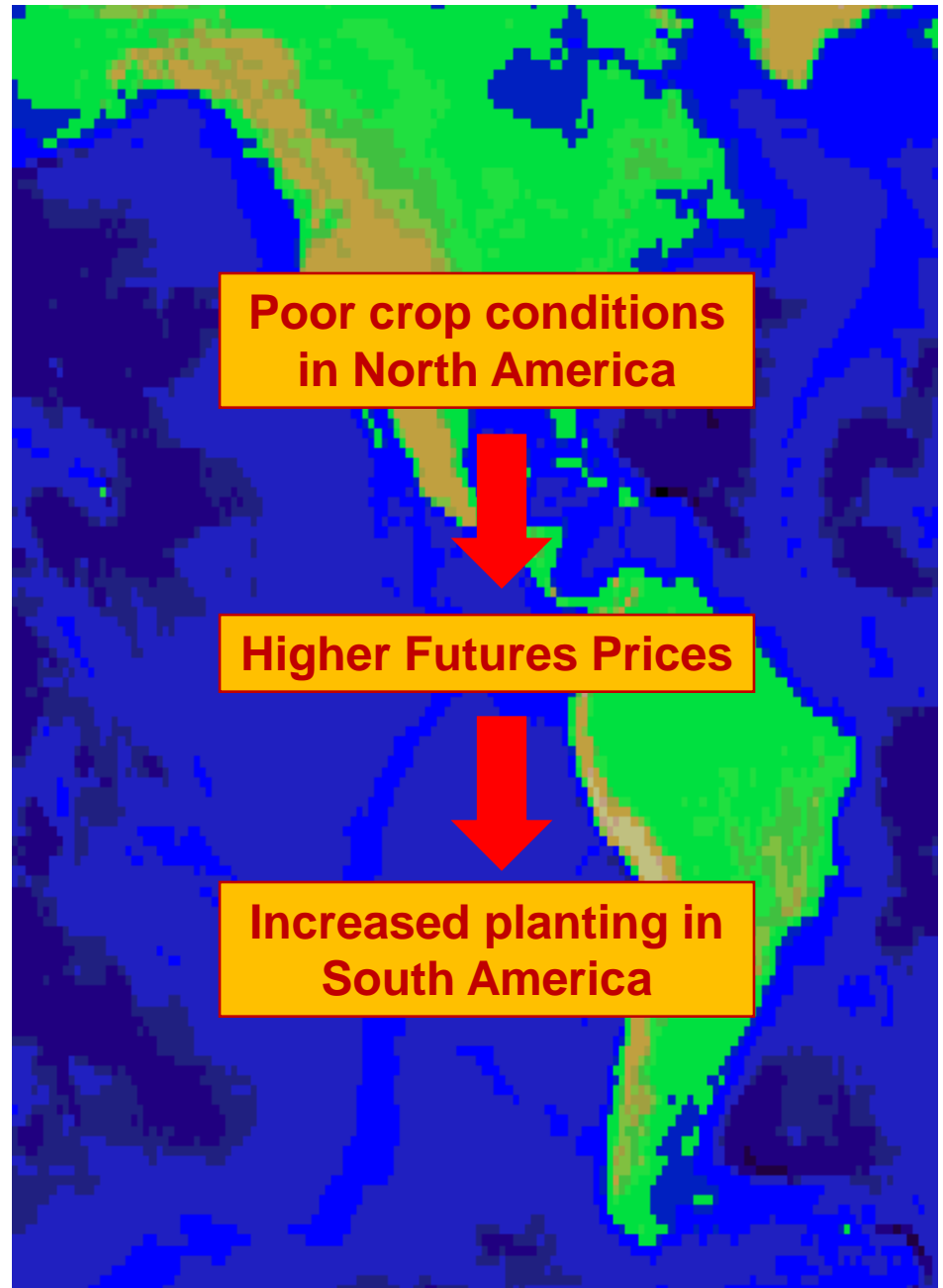
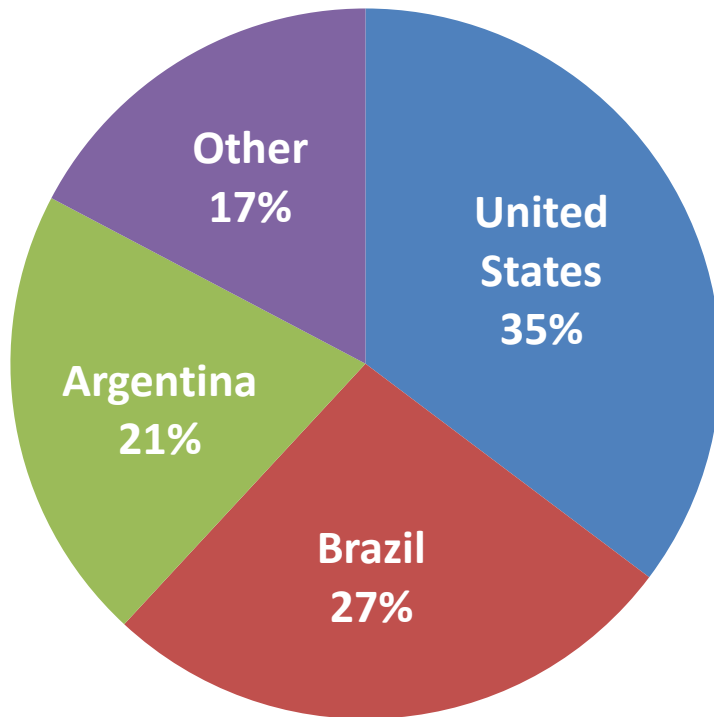
60%

Wheat



30%

# Soybean Production





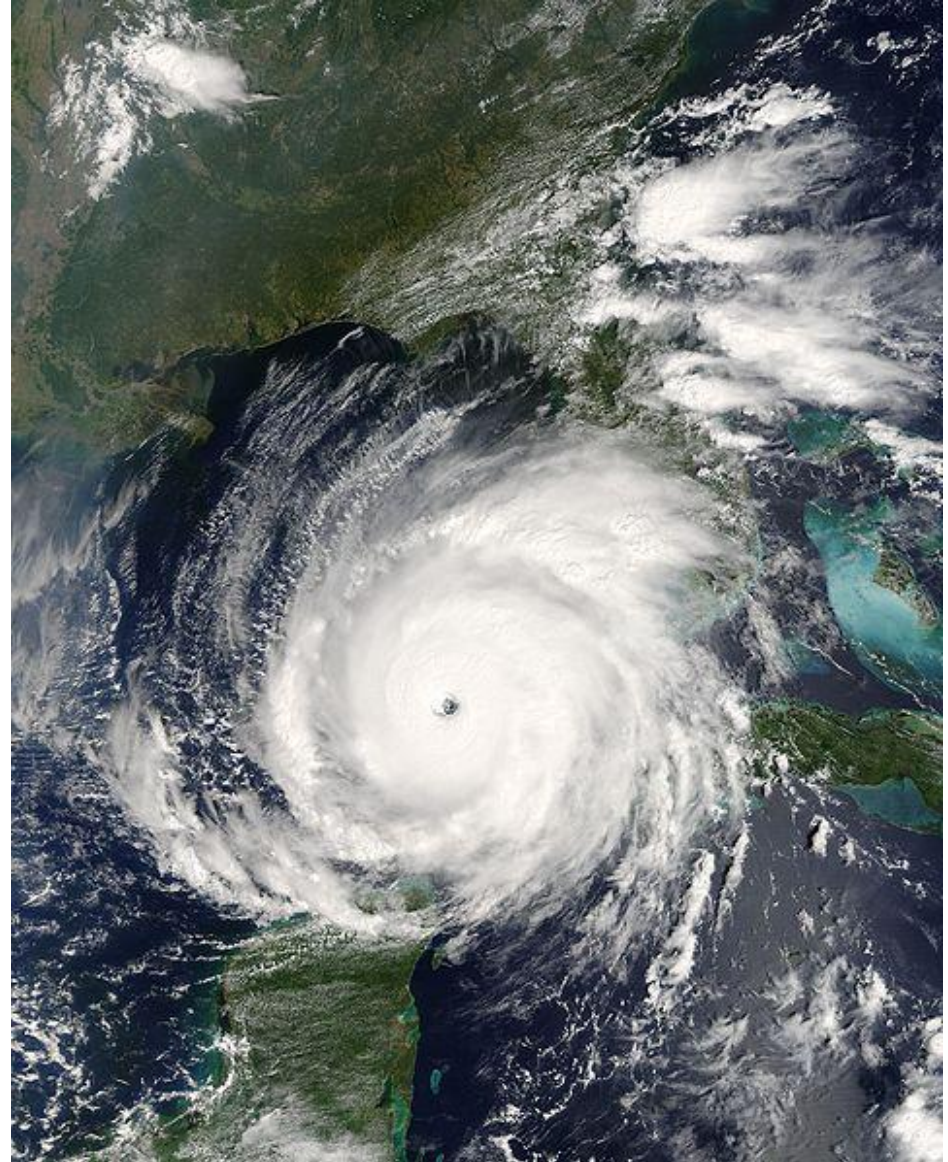
# Hurricanes Katrina and Rita, 2005

Gulf accounts for 40% of  
U.S. Natural Gas  
Production

>700 platforms evacuated

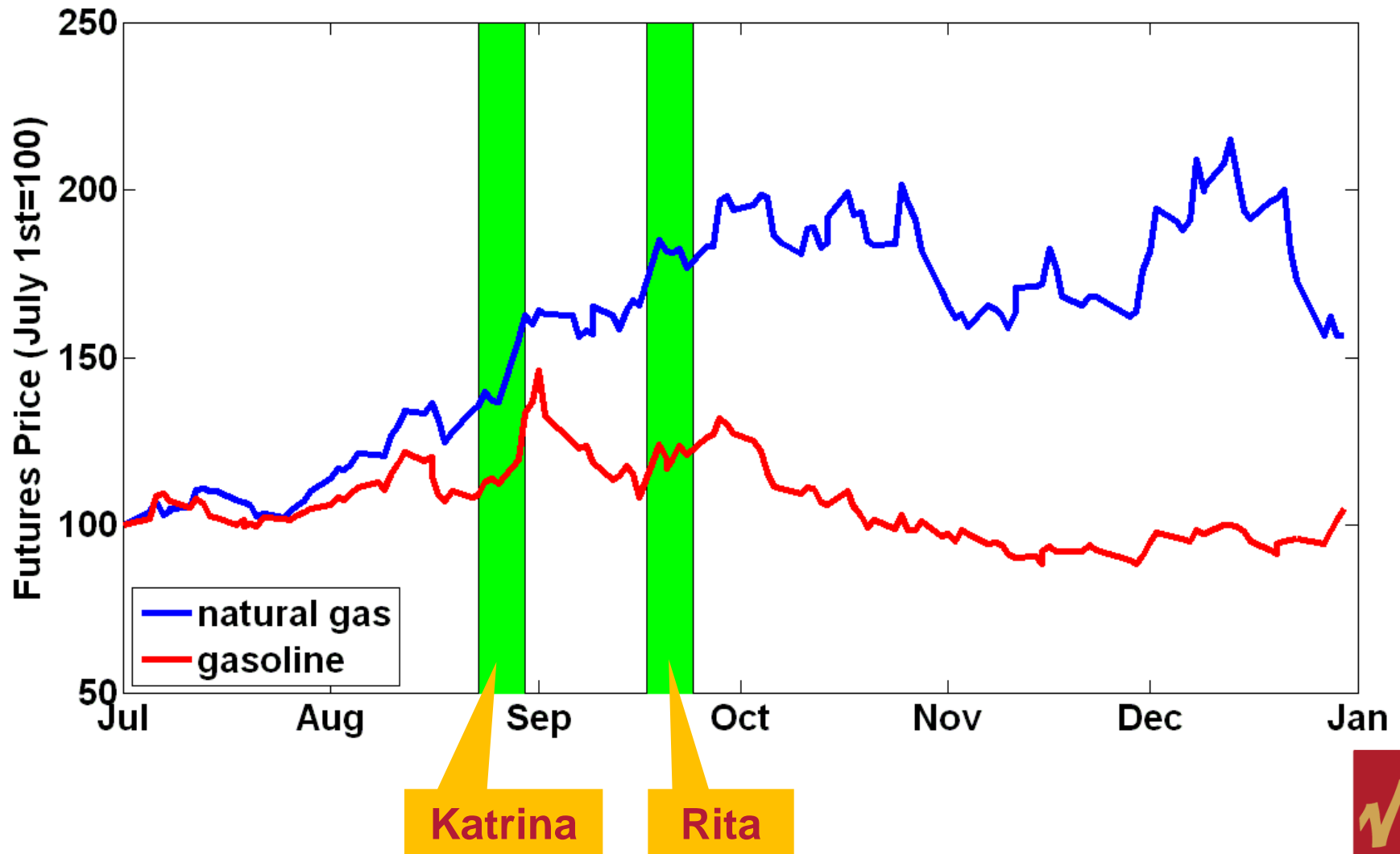
111 platforms destroyed

9.4 Bcf/d of production  
shut-in (total U.S. demand  
61 Bcf/d)





# Effect on Energy Prices



# Benefits of Futures Markets

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As well as being a form of insurance futures prices act as a signal to decision makers.

This signalling is only useful if the futures are priced on a timescale comparable with the decision-making timescale.

# Example: timescale too long

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I buy car insurance annually.

I decide when and where to drive only a time scale minutes to hours.

Progressive Insurance in the U.S. and Aviva in U.K. have piloted Pay-As-you-Drive Insurance.

Uses GPS technology to charge you based on when and where you use your car.

# Example: timescale too short

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I buy home insurance annually.

But a decision about where to build a house is for decades.

Long term insurance against natural hazards (e.g. floods and hurricanes) would provide better protection for homeowners.

It would also allow insurance markets to transmit information about climate risks on useful time-scales.

# Summary

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- Futures markets provide a mechanism for aggregating and signalling information about risk.
- This information is only useful to decision makers if the pricing timescale is commensurate with the decision timescale.

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More information at

**[www.WintonCapital.com](http://www.WintonCapital.com)**

